

MEDICAL DEVICES AND APPLICATIONS OF POLYHYDROXYALKANOATE POLYMERS

Abstract of the Disclosure

Devices formed of or including biocompatible polyhydroxyalkanoates are provided with controlled degradation rates, preferably less than one year under physiological conditions. Preferred devices include sutures, suture fasteners, meniscus repair devices, rivets, tacks, staples, screws (including interference screws), bone plates and bone plating systems, surgical mesh, repair patches, slings, cardiovascular patches, orthopedic pins (including bone filling augmentation material), adhesion barriers, stents, guided tissue repair/regeneration devices, articular cartilage repair devices, nerve guides, tendon repair devices, atrial septal defect repair devices, pericardial patches, bulking and filling agents, vein valves, bone marrow scaffolds, meniscus regeneration devices, ligament and tendon grafts, ocular cell implants, spinal fusion cages, skin substitutes, dural substitutes, bone graft substitutes, bone dowels, wound dressings, and hemostats. The polyhydroxyalkanoates can contain additives, be formed of mixtures of monomers or include pendant groups or modifications in their backbones, or can be chemically modified, all to alter the degradation rates. The polyhydroxyalkanoate compositions also provide favorable mechanical properties, biocompatibility, and degradation times within desirable time frames under physiological conditions.